In the United States Patent and Trademark Office

Appn. Number: _____

Appn. Filed: _____

Applicant(s): Berchert & Hartzell

Appn. Title: method of Precisely Determining the location of a Fault

Examiner/GAU: _____ /324

Mailed: with Application

At: _____

Information Disclosure Statement

Commissioner of Patents and Trademarks
Washington, District of Columbia 20231

Sir:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references cited thereon.

Following are comments on these references pursuant to Rule 98:

Patents which describe systems that monitor voltage and/or current waveforms generated by arcing or discharge fault events are:

Biskeborn, U.S. Pat No 2,493,800, 1950,
Weintraub, U.S. Pat No 2,717,992, 1955,
Biskip, U.S. Pat No 3,462,681, 1969

Patent to Pardis, U.S. Patent No. 3,609,533, 1971, describes a fault location system which utilizes a high energy pulse transmitted on the network under test

Patent to Maureira, U.S. Pat No 5,416,418, 1995, describes application in lower voltage, (ie. 6kV to 33kV), distribution cables, and focuses on partial discharge events using a pulse transmission technique as a reference/timing signal.

Patent to Bjorklund, 5,903,155 describes the same fundamental process that Biskeborn, Weintraub, Biskip, Pardis and Maureira use.

Patent to Wright et al 4,499,417 describes a single ended system that uses the disturbance created by the fault and subsequent reflections.

Patent t Bunch 4,570,231 describes the same

fundamental process that Biskeborn, Weintraub, Biskip, Pardis and Maureira uses.

Patent to Burnett 5,243,294 discloses a complex system for determining the likelihood of a physical anomaly in an elongate, electrically conductive member, such as an oil or gas pipeline. The technique is based on sending two pulses from either end of the physical body to be evaluated.

Patent to Bellis et al 4,491,782 describes improvement to Time Domain Reflectometry, also known as Pulse Echo. This patent is targeted to unstable, transitory faults, as well as stable faults in energized power cable.

Patent to Walsh 5,382,910 describes improvement to Time Domain Reflectometry by canceling out the blind spot or dead zone inherent in any TDR system during the transmission of the test pulse.

Patent to Oberg et al. 5,751,149 describes improvement to Time Domain Reflectometry by implementing a very high and adjustable frequency transmit pulse to allow frequency sensitive faults to be more visible to the TDR.

Patent to Westwood 5,514,965 describes improvement to Time Domain Reflectometry by using new technology, a digital, programmable delay generator device as a TDR timebase to improve resolution of fault reflections.

SINCERELY,

JAMES D. WELCH
REG. NO. 31,216

Form PTO-1449 (REV. 7-80) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. | SERIAL NO.

APPLICANT Borchert et al.

FILING DATE | GROUP

LIST OF PRIOR ART CITED BY APPLICANT

(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	2 4 9 3 8 0 0	1/1950	Bisterbosch			
	AB	2 7 1 7 9 9 2	9/1955	Weintraub			
	AC	3 4 6 2 6 8 1	8/1969	Bistrup	324	52	
	AD	3 6 0 9 5 3 3	9/1971	Pardis	324	52	
	AE	5 4 1 6 4 1 8	5/1995	Maureira et al.	324	535	
	AF	5 9 0 3 1 5 5	5/1999	Bjorklund	324	522	
	AG	4 5 7 0 2 3 1	2/1986	Bunch	364	492	
	AH	5 2 4 3 2 9 4	9/1993	Burnett	324	535	
	AI	4 4 9 1 7 8 2	1/1985	Bellis et al	324	52	
	AJ	5 7 5 1 1 4 9	5/1998	Obers et al	324	533	
	AK	4 4 9 9 4 1 7	2/1985	Wright et al	324	52	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AL							
	AM							

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIA
	AA	5514965	5/1996	Westwood	324	533	
	AB	RE35561	7/1997	Nashiki-eTal	324	520	
	AC	5382910	1/1995	Walsh	324	553	
	AD						
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